The specification has been amended to correct the description of the prior art. The drawing have been amended to conform to the description of the prior art. No new matter has been added.

Claims 1-20 have been amended to clarify the invention with respect to the cited art.

Before responding to the rejections, Applicants would like to distinguish Beser and Sistanizadeh from the present invention (Allard), as follows:

1. Beser discloses a data over cable system providing a bi-directional data path (downstream and upstream) from a data net to customer premise equipment or cable modem. The upstream path may be made via a cable television connection, a wireless connection to send data upstream from a cable modem termination system. The cable modem may also be connected to a telephone network linked to a telephone return termination system, including a telco remote access concentrator coupled to the data net. The cable modem includes a protocol stack using the OSI models for downstream and upstream data transfers with the data net. A Dynamic Host Configuration Protocol (DHCP) layer is implemented by a DHCP server. During the process of establishing network host interfaces, each cable modem sends and receives message to and from the DHCP server. The DHCP interaction includes the allocation of IP addresses by the DHCP. In communicating with the DHCP server, the cable modem may receive an allocated IP address, request an IP address or request a previously allocated IP address. The IP address is set in a selected IP address parameter and a unique client identifier is included as an optional parameter field in a DHCP parameter list. The DHCP parameter list is sent by the cable modem termination system to the DHCP server in a DHCP discover message. The DHCP discover message includes a client identifier for the cable modem and is included in the DHCP parameters of the DHCP discover message. Fig. 6B shows a DHCP parameter list

used in the DHCP discover message. The value for the client identifier function is used in the options' field in the parameter list. The advantage of using the parameter list is that the DHCP server uses the client identifier value in the options field as an index into the DHCP database for IP addresses. Beser fails to disclose elements of Allard, as follows:

A. Beser discloses a cable modem coupled to a cable network for upstream and downstream communication, where a client identifier is generated for each network device as a function of an IP address. In contrast, Allard discloses an ISP address selected by a user for tying the ISP to the user for all ISP services in lieu of other available ISP providers. Beser fails to disclose a user selected ISP address tying an ISP to the user for ISP services.

B. Beser discloses a DHCP message format including an options field for a unique client identifier, which is used as an index into a DHCP database for the address of the cable modem (Col. 13, L38 –49). In contrast, Allard discloses an extended DHCP message including an ISP server address for providing all ISP services to a user in lieu of other available ISP providers. Beser fails to disclose an ISP server address in a DHCP parameter list.

C. Beser discloses standard Internet DHCP protocol for linking a user to an ISP provider identified by the user. In contrast, Allard discloses directly linking a user to a selected ISP provider, bypassing the standard Internet DHCP protocol where the user has selected the provider in advance of an ISP request and the selected ISP has updated the server routing tables.

Summarizing, Beser discloses standard Internet DHCP protocol for linking a user to an ISP provider and includes a client identifier in an option field of a DHCP parameter list to link an address to a network device. In contrast , Allard discloses an extended DHCP parameter list including an ISP server address which links a user to an ISP provider for all ISP services by

passing the standard Internet DHCP protocol. Beser fails to disclose enabling users to obtain all ISP service directly from a selected provider, via DHCP messages, including the address of the selected ISP provider thereby bypassing the standard Internet DHCP protocol.

2. Sistanizadeh discloses a telephone system providing access to Internet information providers in private or corporate local area networks. The network includes an infrastructure comprising a central office and user premises, as well as information provider components and interfaces. In providing access to online service, the end user will use the telephone exchange access service to access an online information provider. The information provider may be anyone of the IPs that currently provide Internet applications. The system makes possible to use one Internet service provider to reach another. When the customer goes online, there is a DHCP request to a DHCP server, which provides an IP address after verification and authentication of the customer. The DCHP packet (Fig. 8) comprises a standard portion and an option portion. Within the option portion, the user name, MAC address and public/private keys are encapsulated. These packets travel back and forth between the DHCP and the PC without modification. If the user desires to use a different Internet service provider, the application is initiated and a different user name and password are provided. The application does a release to the DHCP, which releases the former address, triggers and commences a new process of DHCP requests. The DHCP request occurs without rebooting and identifies the new ISP. Sistanizadeh fails to disclose elements of Allard, as follows:

A. Sistanizadeh discloses a telephone system, including a DHCP server for providing an IP address to initiate a domain name server request for a specific IP server. The DHCP request contains the user name, the MAC address and public/private key information. There is no designation of an alternate provider in the DHCP request. (See Fig. 8A). In contrast,

Allard discloses an extended DHCP message format which identifies a selected ISP server, along with the end-user's id and end-user password to obtain all ISP services (See Fig. 3B). Sistanizadeh fails to disclose an extended DHCP message format, including identification of a selected ISP for all ISP services.

B. Sistanizadeh discloses when a user desires to transfer to another ISP provider, the user clicks on the application and provides a different user name and password and causes the DHCP server to release the former address, trigger a DSN update and initiating a new process of a DHCP request (See col. 13, lines 12-27). In contrast, Allard discloses updating the server database and routing table so as to allow future user messages with the authenticated address to traverse the links authorized to the selected ISP. The future IP packets flow from the customer to the router and then to the selected IP, which forwards the message to the message destination (see page 9, line 20 continuing to page 10, line 2). Sistanizadeh fails to disclose customer messages with an authenticated address to traverse the links authorized to a selected ISP for providing all ISP services to the user.

Summarizing, Beser and Sistanizadeh, alone or in combination, disclose a telephone system having a DHCP message format including an extended portion identifying the user name, the MAC address and public/private key information to facilitate booting-up and obtaining an IP address of network devices. In contrast, Allard discloses a cable system for Internet services and including a DHCP message format, which identifies a selected ISP server such that future messages, may be routed directly to the ISP server identified in the DHCP message format for all ISP services thereby bypassing the standard Internet DHP protocol. Without a disclosure in Beser and Sistanizadeh relating to a DHCP parameter list which enables messages to be routed directly to an ISP of choice for all ISP services thereby bypassing the standard Internet protocol,

there is no support in Beser and Sistanizadeh, alone or in combination to implement claims 1 – 20. The rejection of claims 1-21 under 35 USC 103(a) fails for lack of support. Withdrawal of the rejection of claims 1-21 and allowance thereof are requested.

Now, turning to the rejections, Applicant provides responses to the indicated paragraphs of the Office Action, as follows:

REGARDING PARAGRAPH 1/4:

Claim 1 includes elements not disclosed, suggested or taught in Beser and Sistanizadeh, as follows:

(i) "means for registering at least one customer with a selected Internet Service Provider for all IP services prior to the availability of the services;"

The Examiner acknowledges that Beser does not disclose a customer request for IP services prior to their availability. Sistanizadeh discloses a customer accessing a second provider, but the provider is not identified in the DHCP request as a condition for a service to the provider. Beser and Sistanizadeh fail to disclose registering with a selected service provider for all ISP services prior to receiving the services.

(ii) "means responsive to the registration for storing in the database a customer identification, id and password;"

Applicants can find no disclosure in Beser and Sistanizadeh relative to the ISP providing the server a customer identification and password.

(iii) "means for generating a DHCP message included in an extended portion identifying the selected ISP in a customer request for all IP services with the selected services..."

Beser fails to disclose in Figs. 6B and 7 and extended portion identifying a selected ISP for IP services. Sistanizadeh discloses a DHCP request with an option portion that identifies the customer, but the not the selected ISP. Neither Beser nor Sistanizadeh disclose obtaining all ISP services from a selected ISP

(iv) "means for receiving and routing the customer request and extended DHCP request to the selected ISP for providing all IP services to the customer after updating routing tables in the router;"

Neither Beser of Sistanizadeh disclose a customer selecting an ISP in a DHCP request where the ISP updates the routing tables in the router to establish a message path.

(v) "means for directing future request for all IP services directly to the selected ISP based on the updated routing tables thereby bypassing standard Internet DHCP protocol,"

Both Beser and Sistanizadeh describe standard Internet DHCP protocols. Each customer message is processed for service by a DHCP and DNS server; whereas, Allard discloses ISP requests are sent directly to a selected ISP after routing tables have been updated by the selected ISP thereby bypassing the standard Internet DHCP protocol.

Summarizing, claim 1 describes a customer obtaining all ISP services directly from a selected ISP based on an extended DHCP parameter list including the address of the selected ISP, after the selected ISP updates the routing tables thereby enabling the customer to bypass the standard Internet DHCP protocol for obtaining all ISP services. Without a disclosure of the above-described items, (i)...(v) in Beser and Sistanizadeh, alone or in combination, there is no teaching to enable a worker skilled in the art to implement claim1and the rejection under 35 USC 103 (a)

fails. Accordingly, withdrawal of the rejection of claims 1 under 35 USC 103(a) and allowance thereof are requested.

REGARDING PARAGRAPHS 5-8:

Claims 2-5 further include limitations in the novel elements of claim 1 and are patentable on the same basis thereof. Withdrawal of the rejection of claims 2-5 under 35 USC 103(a) and allowance thereof are requested.

REGARDING PARAGRAPH 9:

Claims 6 and 13 include elements not disclosed, suggested or taught in Beser and Sistanizadeh, alone or in combination as follows:

(i) "means for generating a customer request including an extended DHCP message for access to the IP network, the extended DHCP message including an identification of a selected ISP for all ISP services;"

As discussed in connection with claim 1, neither Beser nor Sistanizadeh disclose an extended DHCP message including an identification of a selected ISP for all ISP services.

(ii) "means for directing future request for IP services directly to the selected ISP after updating routing tables in the router thereby bypassing standard Internet DHCP protocol."

Both Beser and Sistanizadeh disclose standard Internet DHCP protocol. Allard enables the customers to go directly to the selected ISP without engaging in the standard Internet DHCP request, as described in the specification at page 9, line 20, continuing to page 10, line 5. Without a disclosure in Beser and Sistanizadeh, alone or in combination related to items (i) and (ii) described above, there is no basis for a worker skilled in the art to implement claims 6 and

13. Withdrawal of the rejection of claims 6 and 13 under 35 USC 103(a) and allowance thereof are requested.

REGARDING PARAGRAPHS 10-22:

Claims 14-20 depend directly or indirectly upon claim 13 and include further defining elements. Claims 14-20 are patentable on the same basis as claim 13 from which they depend. Withdrawal of the rejection of claims 14-20 under 35 USC 103(a) and allowance thereof are requested.

CONCLUSION

Having amended the specification to correct informalities without the addition of new matter; revised the Abstract to be less than 150 words; and amended the claims to clarify the invention with respect to the cited art, Applicants request entry of the amendment, allowance of the claims and passage to issue of the case.

AUTHORIZATIONS

The Commissioner is hereby authorized to charge any additional fees that may be required for this Response, or credit any overpayment to Deposit Account No. 09-0452, Order No. BC9-99-046 (1963-7353).

Respectfully submitted,
MORGAN & FINNEGAN, L.L.P.

Dated: November 15, 2002 By: Joseph C Redmond

Joseph C. Redmond
Registration No. 18,753
202-857-7887 Telephone
202-857-7929 Facsimile

Correspondence Address:
MORGAN & FINNEGAN, L.L.P.
345 Park Avenue
New York, NY 10154-0053

Attorney's Docket No. BC9-99-046 (1963-7353)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): David J. Allard et al.

Serial No.: 09/472,602 Group Art Unit: 2152

Filed: December 27, 1999 Examiner: Chau T. Nguyen

For: BROADBAND MULTI-SERVICE PROXY SERVER SYSTEM AND METHOD OF OPERATION FOR INTERNET SERVICES OF USER'S CHOICE

ATTACHMENT A – SHOWING MARKUP OF CHANGES

Commissioner for Patents
Washington, D.C. 20231

Sir:

IN THE SPECIFICATION:

Page 3, paragraphs 3 and 4 (that continue to page 4) has been AMENDED as follows;

Another object is a broadband [multi-server] **multi-service** proxy server and method of operation in an Internet environment using a message format which enables broadband customers to select an ISP of their choice for services available from the Internet.

These and other objects, features and advantages are achieved in a broadband multi-server proxy server and method of operation using an extended DHCP message format which enables broadband customers, typically cable network customer, to select an ISP of their choice for services available from the Internet. A broadband network includes a multi channel cable coupled at one end to a plurality of customers and a home network serving several stations within a location. The network is coupled at the other end to head end equipment providing

cable services to the cable customers. Each customer is assigned a Medium Access Control (MAC) address on the network. The head end equipment is linked to a modem management system and a router. A Broadband Multi-service Proxy Server (BMPS) having a database [containg] **containing** customer service information is coupled to the router. The MAC addresses of the cable customers are stored in the database. An Internet Service Provider network is coupled to the router and serves a plurality of Internet Service Providers (ISP), each ISP being linked to the Internet. In operation, the cable customers register with the ISPs of their choice. The ISPs send the customers a customer ID, password, a log on script and updates its database and the database of the BMPS with the customer information. The BMPS authorizes the customer modem and router for access to the ISP. As part of a customer's logon request, the MAC address is attached to identify the origination point of the request. The logon script sends the logon request in an extended DHCP message to the ISP via the BMPS for an Internet address. The BMPS checks the logon request against the database to verify a legitimate customer and obtains the customer profile for management and billing purposes. The BMPS sends the logon request to the requested ISP using the customer ID, password and the BMPS as the source address for any customer message. The ISP verifies the customer address again its database and updates the router address tables to accept customer messages with the new address. Normal customer ISP traffic begins. Return message to the customer are received by the BMPS which forwards the messages to the customer at their MAC address. When the customer logs off, the ISP expires the customer address, updates the router as necessary and sends a logoff message to the BMPS. The BMPS cancels the customer address, updates the router; the database and billing files as necessary. The broadband multi-service proxy server can remain in the serial path if desired to continuously check on the validity of the packets and also count the

packets for billing purposes traversing their link. Alternatively, the broadband multi-service **server** can be removed from the link allowing the packets to flow directly to the router and thence to the Internet through the ISP of their choice.

Page 5, paragraph 6, has been AMENDED as follows:

In Fig. 1 a broadband, shared link, multi-user network 10, such as a cable, satellite, radio, LAN/Wan includes a network 11 coupled **to** a plurality of customers 12^1, 12^2...12^n **via computers 13^1, 13^2 and 13^n** and an Internet Service Provider (ISP) 14 associated with the network 10. For simplicity, the broadband network 10 will be described in terms of a cable network 11 in which the customers 12^1...12^n include cable modems 16^1, 16^2.... 16^n which link the customers through a broadband cable 18 to a cable affiliated ISP server **14** [20] **(not shown)**. Typically, the cable modems use an Ethernet protocol for the computers 13^1, 13^2 and 13^n. The modems look like any LAN network to the computer. The computers use a frequency shift to put an Internet protocol into a given channel assignment on the cable 18. Typically, the modems [16', 16^1] **16^1, 16^2 and 16^n** share the last mile of the cable to the **ISP server 14** [20] **(not shown)**. As a result, the **ISP** server **(not shown)** cannot send responses back to the cable or broadband customers based on an individual line or port connection point as in the case of a dial-in modem connection to the Internet. In the latter case, an ISP attaches the user to an authentication server, typically a Remote Authentication Dial in User Services (RADIUS) server which is a software-based security authentication protocol developed by the International Engineering Task force (IETF) RADIUS Working Group and available from a number of suppliers including Microsoft, Redmond, Washington. RADIUS provides access to all Internet services using one username and password. If the authentication is correct, the customer is

assigned a temporary IP address from the ISP's pool of available addresses using a protocol called Dynamic Host connection Protocol (DHCP). DHCP provides a mechanism through which computers using Transaction Control Protocol/Internet Protocol (TCP/IP) can obtain protocol configuration parameters automatically through the network. The most important configuration parameter is an IP address carried by DHCP and assigned to a computer from a pool of IP addressees managed by DHCP. DHCP is an open standard, developed by the Dynamic Host Configuration working group (DHC WG) of the Internet Engineering Task force (IETF).

IN THE CLAIMS:

The claims have been AMENDED as follows:

1. (Amended) A broadband Internet Protocol (IP) based network, comprising:

at least one customer coupled to the network **via a broadband multi service proxy server (BMPS) including a database and a router** [for receiving IP services];

means for registering the at least one customer with a selected Internet Service Provider (ISP) for all IP services, prior to receiving the services;

means responsive to the registration for storing in the database a customer identification, ID and password;

means for generating a DHCP message **including an extended portion identifying the selected ISP** in a customer request for **all** IP services with [a] **the** selected Internet Services Provider (ISP);

[server means for receiving the request and DHCP message and generating an extended DHCP request; and]

means for receiving and routing the customer request and extended DHCP request to the selected ISP for providing **all** IP services to the customer [via the selected ISP] **after updating routing tables in the router; and**

means for directing future customer request for all IP services directly to the selected ISP based on the updated routing tables thereby bypassing standard Internet DHCP protocol.

3. (Amended) The broadband network of Claim 1 further comprising:

means [coupled to the server means] for storing customer address information **in the database**.

4. (Amended) The broadband network of Claim [1] **2** further comprising:

means for mapping the unique customer address to **the** DHCP request.

5. The broadband network of Claim 1 further comprising:

routing means coupled to the [server] **BMPS for** [and a network] serving a plurality of [ISP] **ISPs**.

6. (Amended) A broadband multi service proxy server, comprising:

means coupling the server **via a router** to a broadband IP based network serving a plurality of customers;

means coupling the server **and the router** to an IP network via at least one Internet Service Providers (ISP) in a plurality of ISPs;

means for generating a customer request including an extended DHCP message for access to the IP network, **the extended DHCP message including an identification of a selected ISP for all ISP services**; [and]

means [for generating an extended DHCP message format in the server] enabling [a] **the** customer to access [an] **the selected** ISP of choice for IP network services**; and**

means for directing future customer requests for IP services directly to the selected ISP after updating routing tables in the router thereby bypassing standard Internet DHCP protocol.

8. (Amended) The server of Claim 6 further comprising:

means for pre- registering a customer for IP service with an ISP prior to generating a customer request; **and**

means for sending the server a customer ID and password for customers registered by the ISP.

11. (Amended) The server of Claim 6 further comprising:

[server] means for mapping validated customer requests to a unique customer address; and

[server] means emulating the ISP and sending the customer a DHCP response to the customer request.

12. (Amended) The server of Claim 6 further comprising:

means for validating a customer request for access to the IP network at [an] **the** ISP of customer choice.

13. (Amended) In a broadband IP based network including server means coupled to the network and to a plurality of ISPs via a switching means, a method of providing IP services to network customers via **an** ISP of their choice, comprising the steps of:

registering a customer for IP services from a selected Internet service provider (ISP);

generating a request by [a] **the** customer including a DHCP message for IP services from [a] **the** selected ISP;

sending the request and DHCP message to the server for processing to determine if the customer is approved by the network for receiving IP services;

sending the request and an extended DHCP message for IP service to the selected ISP **for all ISP services**; [and]

returning the extended DHCP message to the server and updating tables in the switching means to provide the customer with IP services directly from the selected ISP**; and**

directing future customer requests for IP services directly to the selected ISP thereby bypassing standard Internet DHCP protocol.

15. (Amended) The method of Claim 13 further comprising the step of:

emulating the ISP by the server means and sending a DHCP reply to the customer followed by updating the switching means to allow the customer to access the ISP of [its] choice.